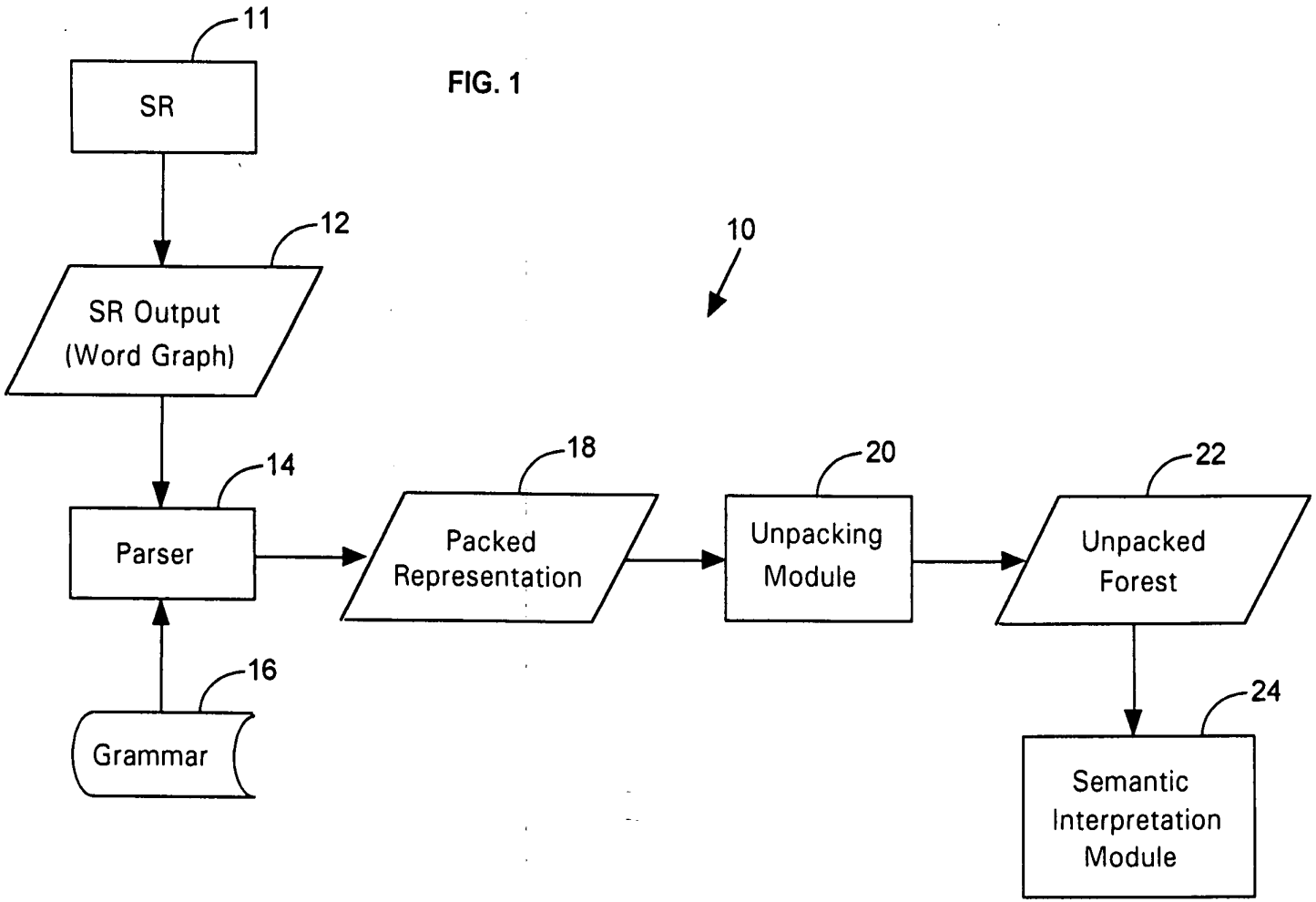
FIG. 1



D6592600 .101900

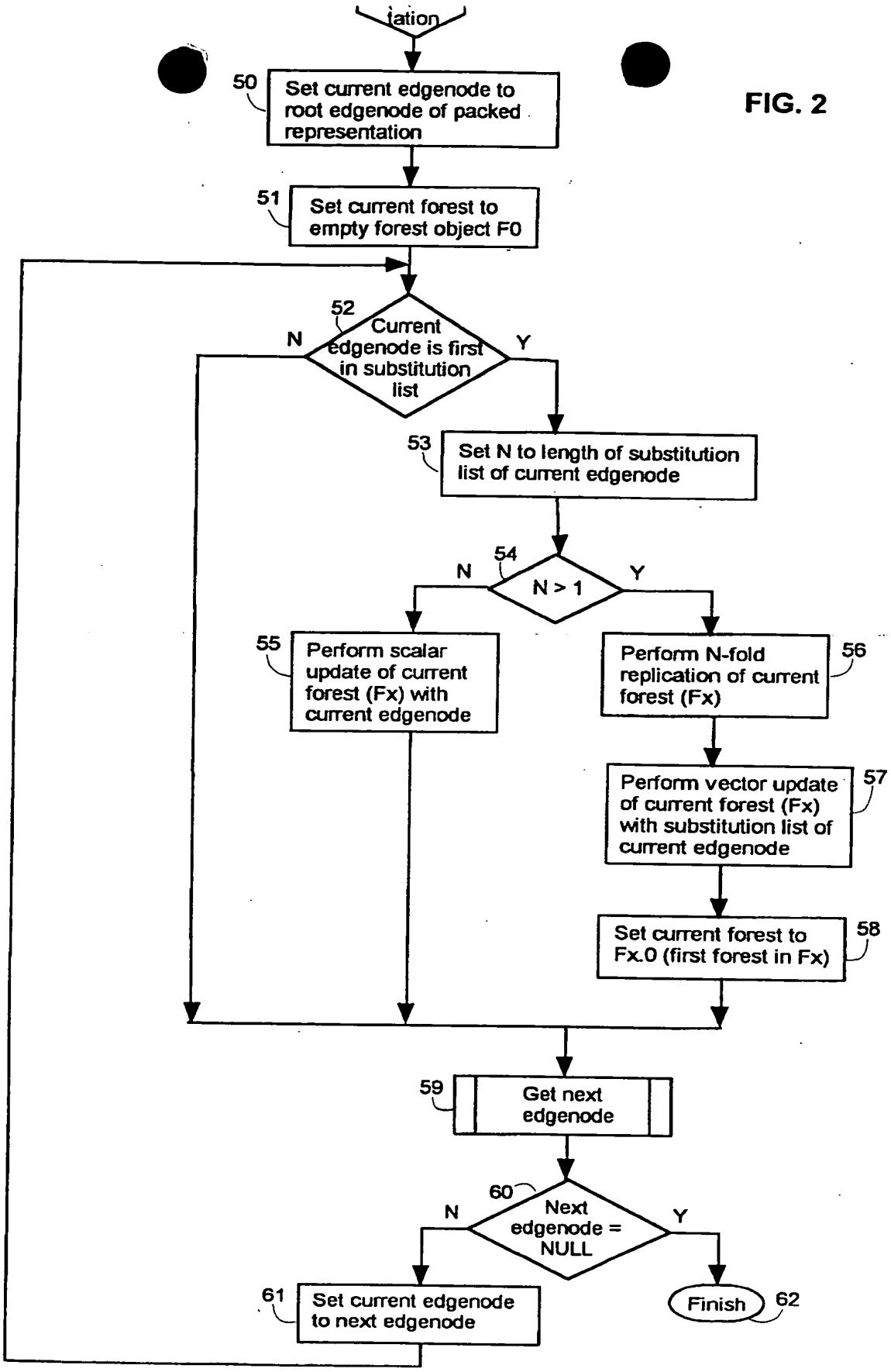

iation
50
Set current edgenode to root edgenode of packed representation
51
Set current forest to empty forest object F0
52
Current edgenode is first in substitution list
N
Y
53
Set N to length of substitution list of current edgenode
54
N > 1
N
Y
55
Perform scalar update of current forest (Fx) with current edgenode
56
Perform N-fold replication of current forest (Fx)
57
Perform vector update of current forest (Fx) with substitution list of current edgenode
58
Set current forest to Fx.0 (first forest in Fx)
59
Get next edgenode
60
Next edgenode = NULL
N
Y
61
Set current edgenode to next edgenode
Finish
62

FIG. 2

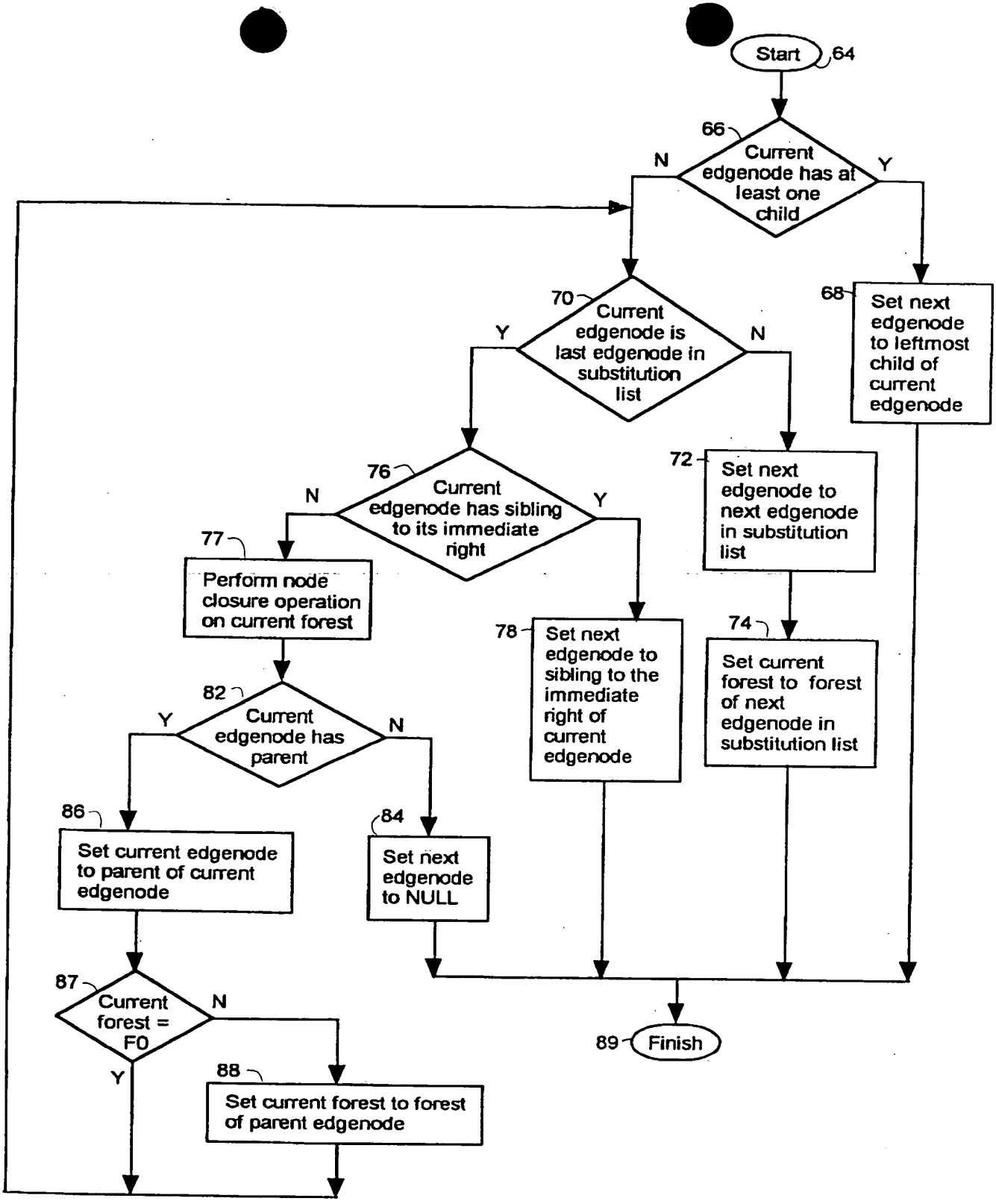

Start
64
66
Current edgenode has at least one child
N
Y
68
Set next edgenode to leftmost child of current edgenode
70
Current edgenode is last edgenode in substitution list
Y
N
72
Set next edgenode to next edgenode in substitution list
76
Current edgenode has sibling to its immediate right
N
Y
77
Perform node closure operation on current forest
78
Set next edgenode to sibling to the immediate right of current edgenode
74
Set current forest to forest of next edgenode in substitution list
82
Current edgenode has parent
Y
N
86
Set current edgenode to parent of current edgenode
84
Set next edgenode to NULL
87
Current forest = F0
N
Y
88
Set current forest to forest of parent edgenode
89
Finish

FIG. 3A

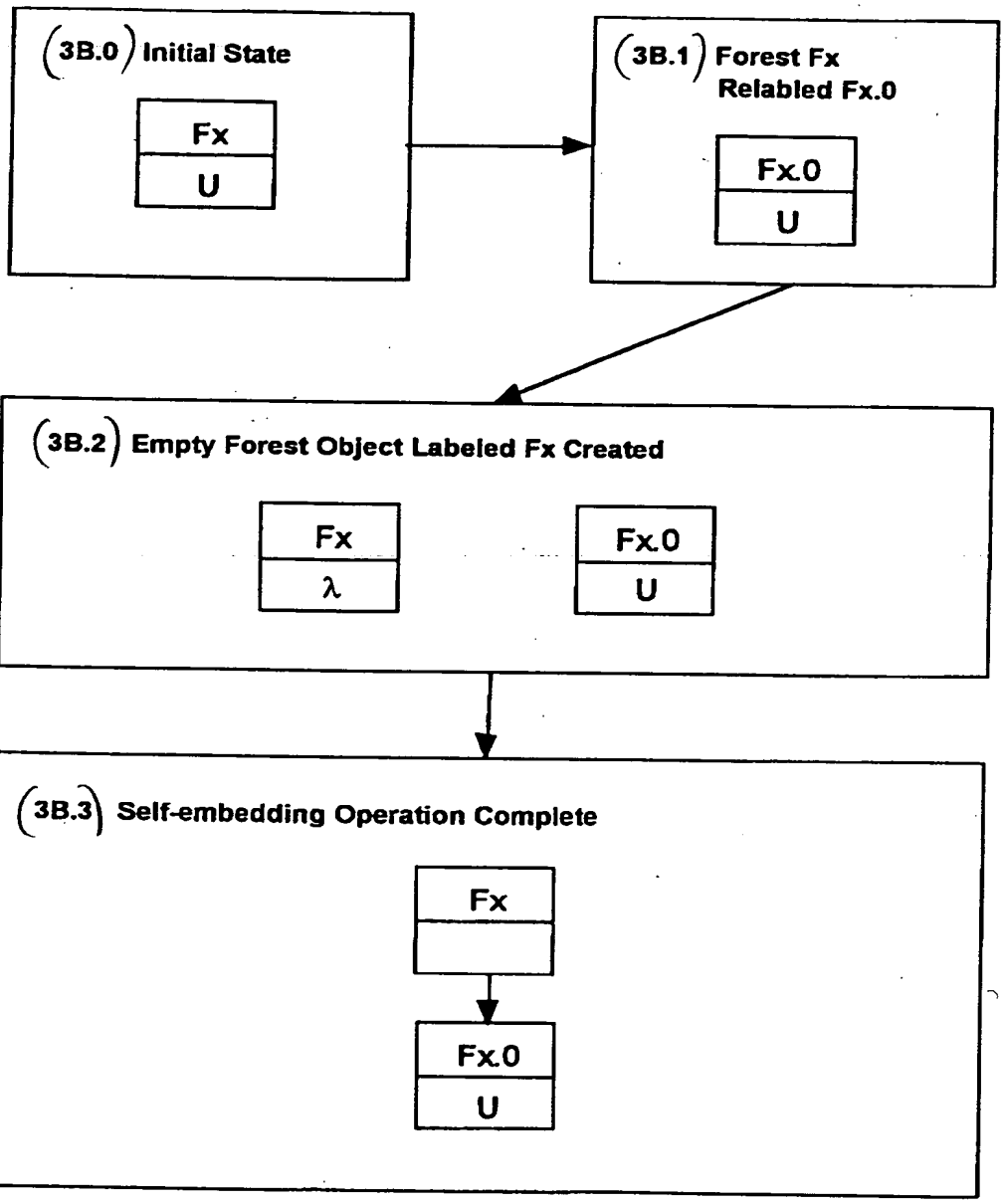

(3B.0) Initial State
Fx
U
(3B.1) Forest Fx
Relabled Fx.0
Fx.0
U
(3B.2) Empty Forest Object Labeled Fx Created
Fx
λ
Fx.0
U
(3B.3) Self-embedding Operation Complete
Fx
Fx.0
U

FIG. 3B

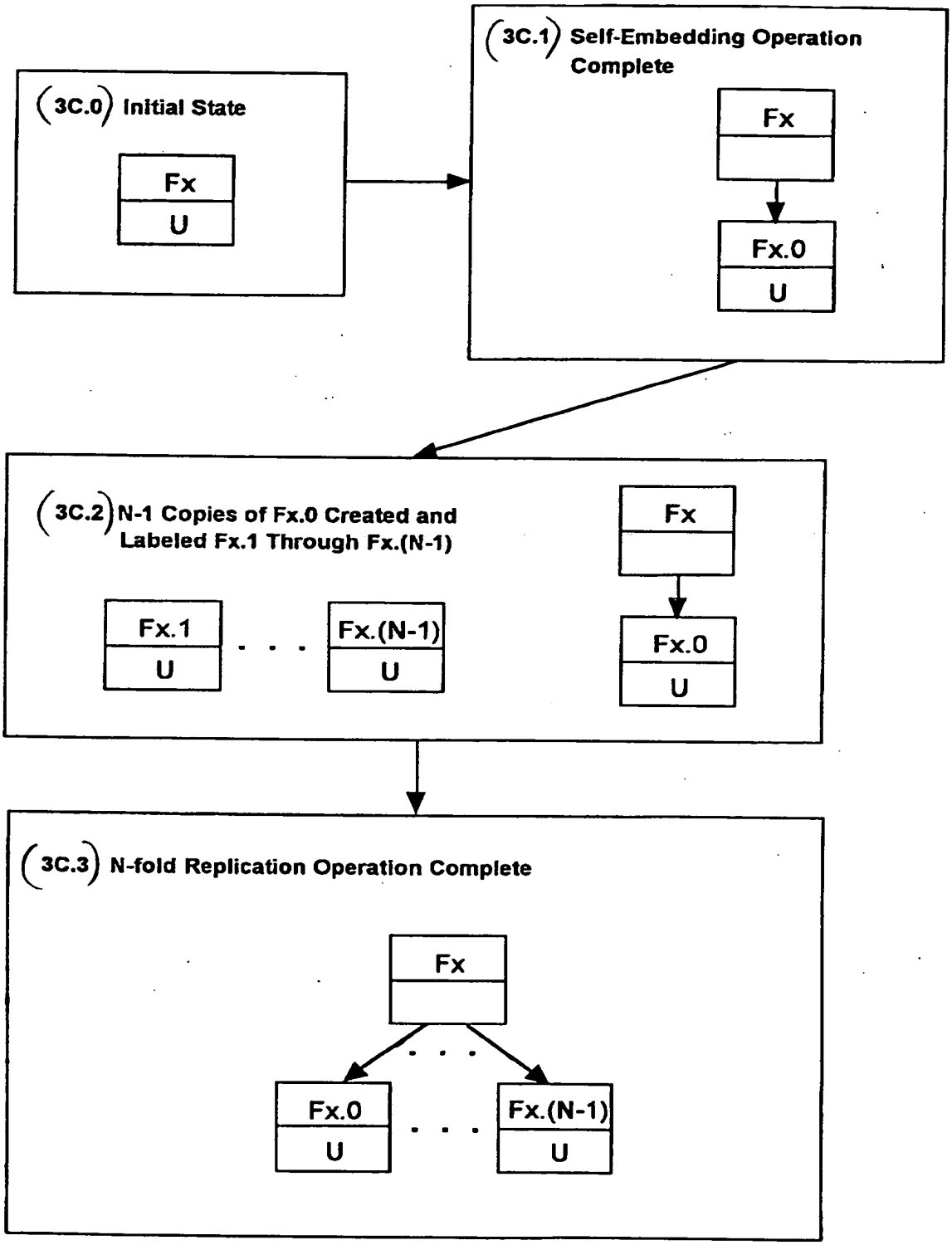

(3C.0) Initial State
Fx
U
(3C.1) Self-Embedding Operation Complete
Fx
Fx.0
U
(3C.2) N-1 Copies of Fx.0 Created and Labeled Fx.1 Through Fx.(N-1)
Fx.1
U
Fx.(N-1)
U
Fx
Fx.0
U
(3C.3) N-fold Replication Operation Complete
Fx
Fx.0
U
Fx.(N-1)
U

FIG.3C

FIG. 4

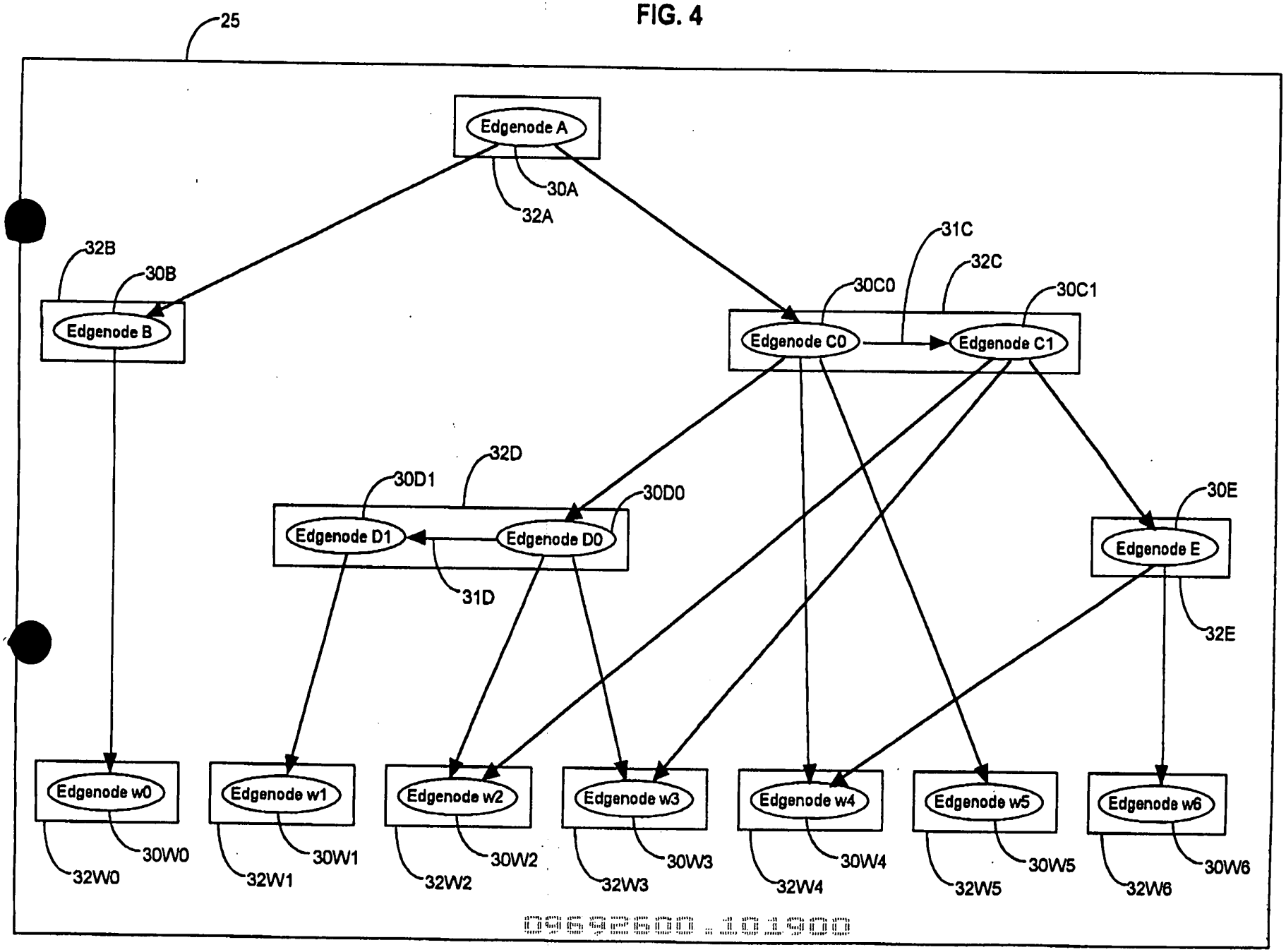

25
Edgenode A
30A
32A
32B
30B
Edgenode B
31C
32C
30C0
30C1
Edgenode C0
Edgenode C1
32D
30D1
30D0
Edgenode D1
Edgenode D0
31D
30E
Edgenode E
32E
Edgenode w0
Edgenode w1
Edgenode w2
Edgenode w3
Edgenode w4
Edgenode w5
Edgenode w6
30W0
32W0
30W1
32W1
30W2
32W2
30W3
32W3
30W4
32W4
30W5
32W5
30W6
32W6

FIG. 5

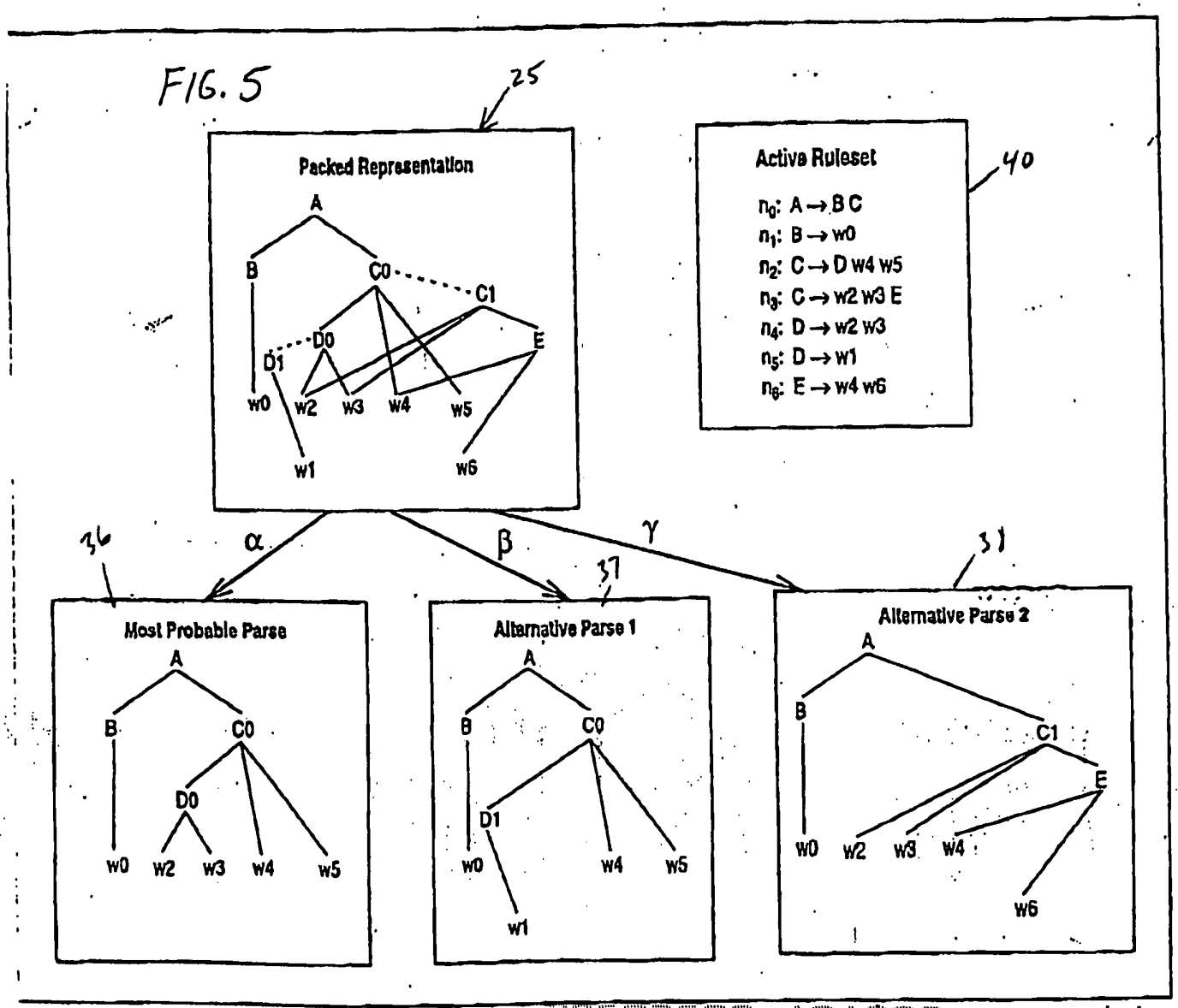

25
Packed Representation
A
B
C0
C1
D0
D1
E
w0
w2
w3
w4
w5
w1
w6
Active Ruleset
40
n_0: A → B C
n_1: B → w0
n_2: C → D w4 w5
n_3: C → w2 w3 E
n_4: D → w2 w3
n_5: D → w1
n_6: E → w4 w6
α
β
γ
36
37
31
Most Probable Parse
Alternative Parse 1
Alternative Parse 2

Figure 6: Traversal Algorithm for Unpacking Parses

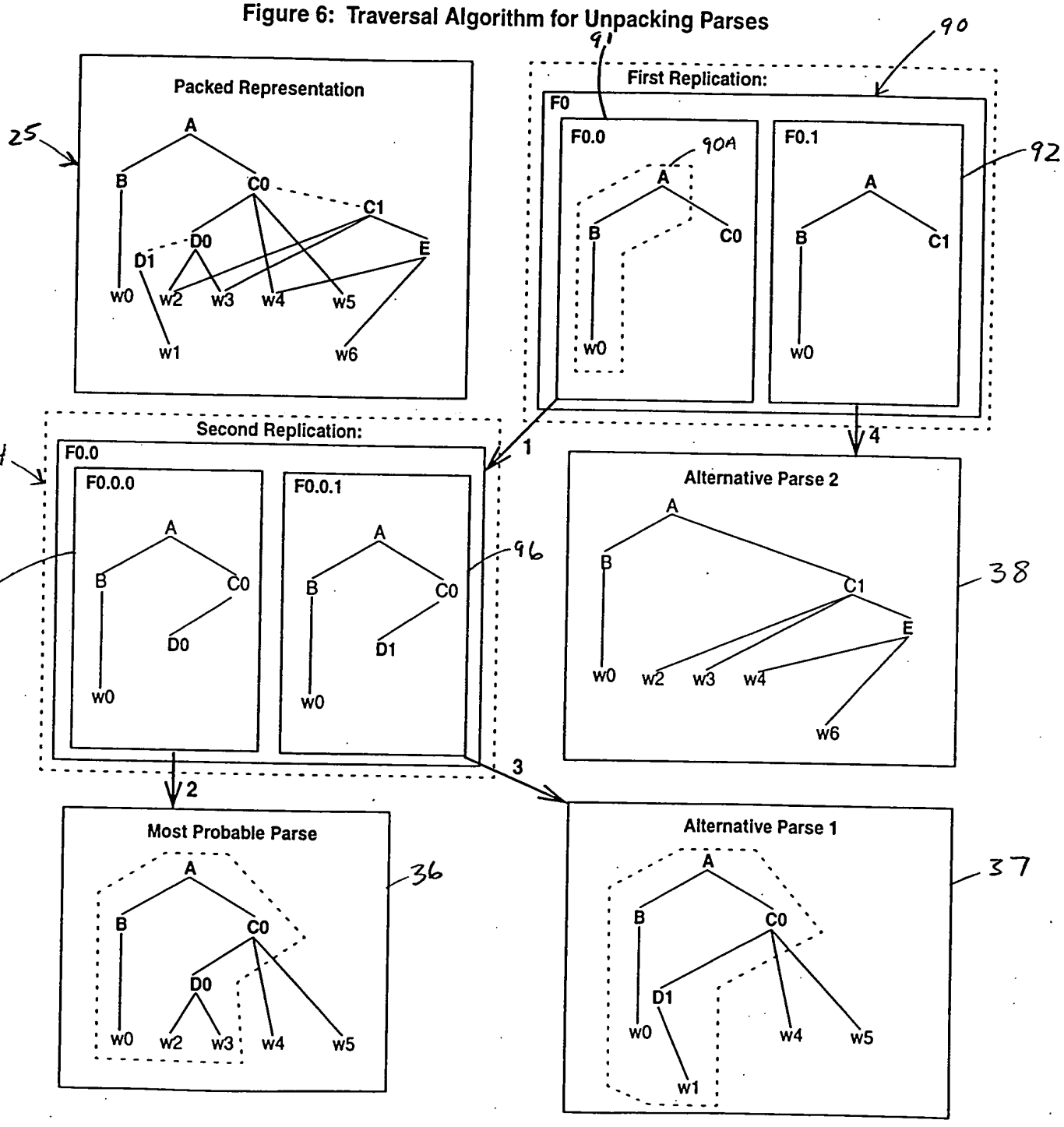


FIG. 7

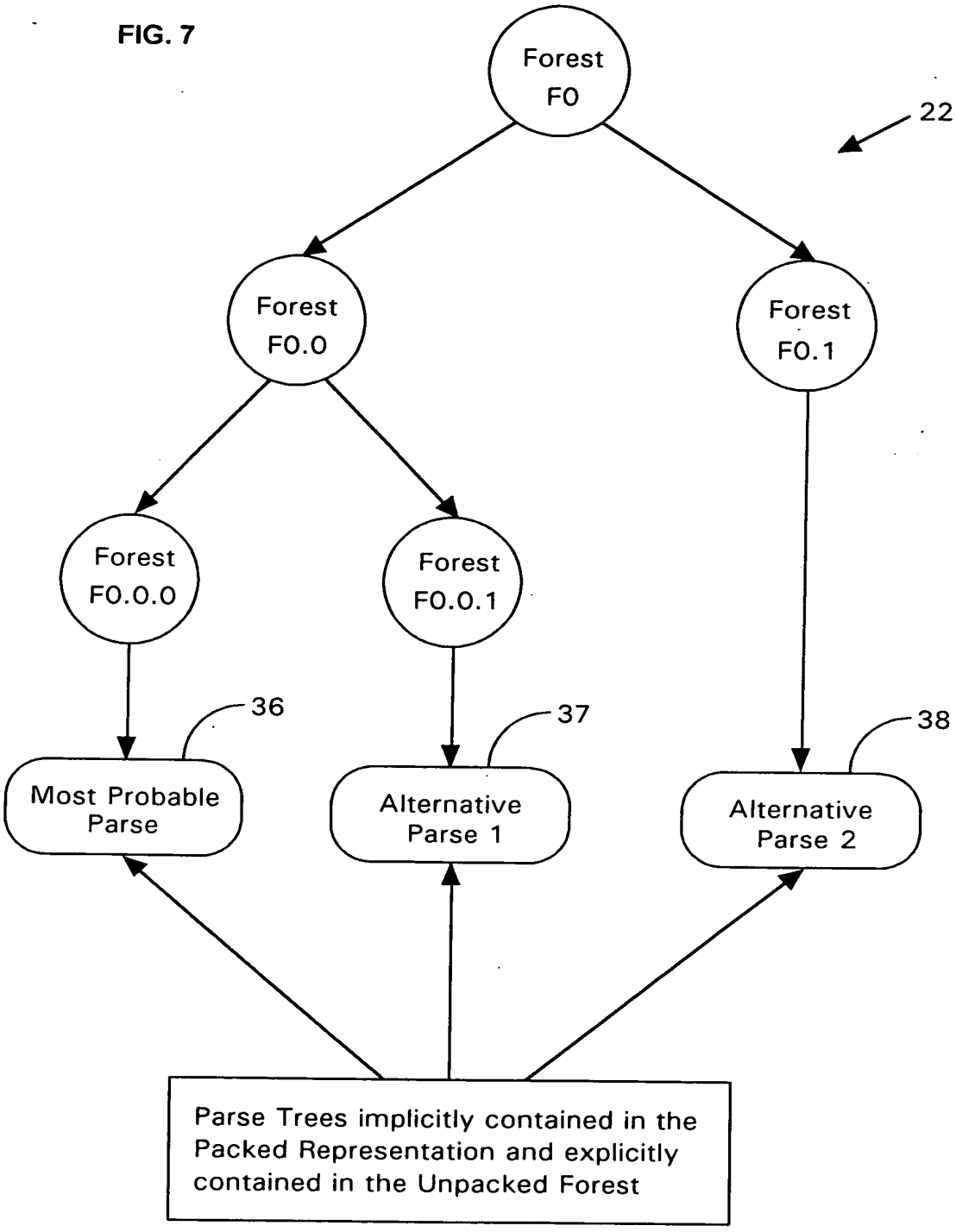

Forest
F0
22
Forest
F0.0
Forest
F0.1
Forest
F0.0.0
Forest
F0.0.1
36
37
38
Most Probable
Parse
Alternative
Parse 1
Alternative
Parse 2
Parse Trees implicitly contained in the
Packed Representation and explicitly
contained in the Unpacked Forest

FIG. 8

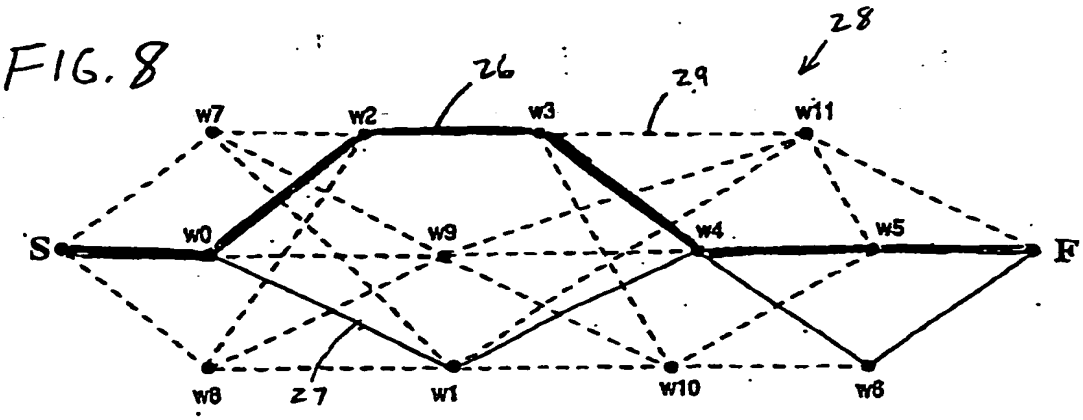


FIG. 9

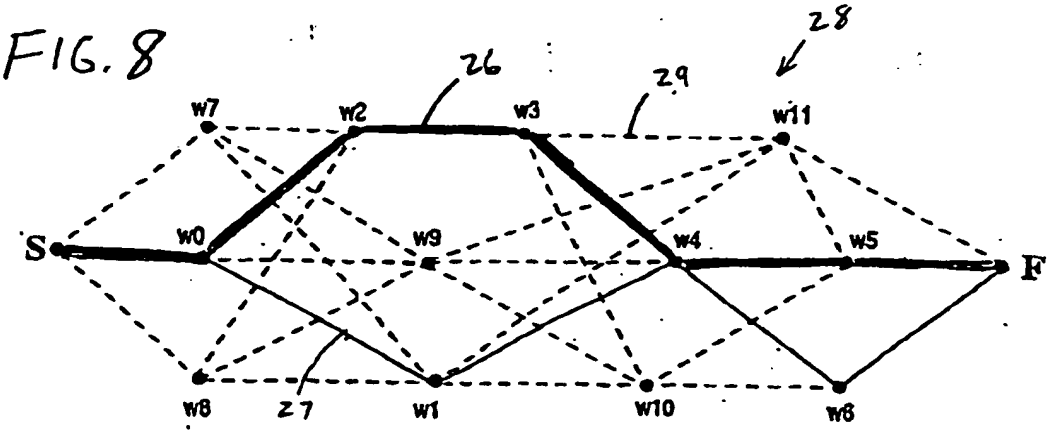



FIG. 8